Table S1 Summary of quadratic model

Fit Statistics	R^2	Adj R^2	Pred R^2	Adeq Precision	C.V. %	Std. Dev.	Mean
	0.98	0.97	0.86	28.76	2.02	1.60	79.35

Table S2 The experimental results are verified under optimized conditions

Test conditions	A NaOH/ILL	B Tep（℃）	C T（h）	B Removal rate %
Optimum conditions	1.18	185.154	2.76	95.15
Adjustment conditions	1.2	185	2.7	94.5

Table S3.Parameters of kinetie models predicting the experimental data for Pb(II) and Cu(II)

	$q_{e,exp}$(mg/g)	Pseudo-first-order kinetic model				Pseudo-second-order kinetic model			
		$q_{e,cal}$(mg/g)	K_1(min^{-1})	R^2	χ^2	$q_{e,cal}$(mg/g)	K_2(10^{-3}g/(mg·min))	R^2	χ^2
Pb(II)	279.74	271.14	0.5543	0.8971	2.9965	281.10	0.00361	0.9985	0.0292
Cu(II)	51.60	48.96	03217	0.9723	2.6469	51.80	0.00793	0.9986	0.4696